

WHAT IS CLAIMED IS:

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1. A logged-in device that is logged in by a plurality of specific devices via a predetermined communication path, said logged-in device comprising:

5 a response unit that gives a response of failed log-in to one specific device of interest, which has just output a request of log-in, when a number of specific devices that currently log in said logged-in device reaches a predetermined allowable number of simultaneous log-in; and

10 a re-request timing specification unit that specifies a timing of re-request of log-in to determine a time when said specific device of interest, which has just output the request of log-in and received the response of failed log-in, should output another request of log-in.

2. A logged-in device in accordance with claim 1, wherein said re-request timing specification unit comprises:

15 a precedence designation unit that allocates an ordinal number of precedence to said specific device of interest, which has just output the request of log-in; and

20 a re-request timing determination unit that determines the timing of re-request of log-in with regard to said specific device of interest, based on the ordinal number of precedence allocated to said specific device of interest.

25 3. A logged-in device in accordance with claim 2, wherein said precedence designation unit allocates ordinal numbers of precedence to said plurality of specific devices in a sequence of outputting first requests of log-in.

30 4. A logged-in device in accordance with claim 2, wherein said re-request timing determination unit assigns a shorter timing of re-request of log-in to a specific device having a higher ordinal number of precedence.

5. A logged-in device in accordance with claim 1, wherein said re-request timing specification unit specifies the timing of re-request of log-in as a time constant that represents a time period to elapse before output of another request of log-in.

6. A logged-in device in accordance with claim 1, said logged-in device comprises at least one logical unit, which is independently logged in by each of said plurality of specific devices,

wherein said response unit gives a response of failed log-in with regard to a certain logical unit to one specific device of interest, which has just output a request of log-in to said certain logical unit, when a number of specific devices that currently log in said certain logical unit reaches an allowable number of simultaneous log-in preset for said certain logical unit, and

said re-request timing specification unit specifies a timing of re-request of log-in to determine a time when said specific device of interest, which has just output the request of log-in to said certain logical unit and received the response of failed log-in, should output another request of log-in to said certain logical unit.

7. A logged-in device in accordance with claim 2, said logged-in device comprises at least one logical unit, which is independently logged in by each of said plurality of specific devices,

wherein said response unit gives a response of failed log-in with regard to a certain logical unit to one specific device of interest, which has just output a request of log-in to said certain logical unit, when a number of specific devices that currently log in said certain logical unit reaches an allowable number of simultaneous log-in preset for said certain logical unit, and

said re-request timing specification unit specifies a timing of re-

request of log-in to determine a time when said specific device of interest, which has just output the request of log-in to said certain logical unit and received the response of failed log-in, should output another request of log-in to said certain logical unit.

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8. A logged-in device in accordance with claim 1, wherein said plurality of specific devices are adjusted not to output the request of log-in simultaneously via said predetermined communication path.

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9. A logged-in device in accordance with claim 2, wherein said plurality of specific devices are adjusted not to output the request of log-in simultaneously via said predetermined communication path.

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10. A logged-in device in accordance with claim 1, wherein said predetermined communication path comprises an IEEE1394 bus.

11. A logged-in device in accordance with claim 2, wherein said predetermined communication path comprises an IEEE1394 bus.

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12. A logged-in device in accordance with claim 1, said logged-in device communicating with said plurality of specific devices according to an SBP-2 protocol.

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13. A logged-in device in accordance with claim 2, said logged-in device communicating with said plurality of specific devices according to an SBP-2 protocol.

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14. A log-in device that logs in a specific device via a predetermined communication path, said log-in device comprising:  
a log-in request unit that outputs a request of log-in to said specific

device and, when receiving a response of failed log-in and a specification of a timing of re-request from said specific device, outputs another request of log-in to said specific device at the specified timing of re-request.

5           15. A log-in device in accordance with claim 14, said log-in device being adjusted not to output the request of log-in simultaneously with output of a request of log-in from another device via said predetermined communication path.

10           16. A log-in device in accordance with claim 14, wherein said predetermined communication path comprises an IEEE1394 bus.

15           17. A log-in device in accordance with claim 14, said log-in device communicating with said specific device according to an SBP-2 protocol.

18. An inter-device communication system, where a logged-in device is logged in by a plurality of log-in devices via a predetermined communication path,

said logged-in device comprising:

20           a response unit that gives a response of failed log-in to one log-in device of interest, which has just output a request of log-in, when a number of log-in devices that currently log in said logged-in device reaches a predetermined allowable number of simultaneous log-in; and

25           a re-request timing specification unit that specifies a timing of re-request of log-in to determine a time when said log-in device of interest, which has just output the request of log-in and received the response of failed log-in, should output another request of log-in,

each of said plurality of log-in devices comprising:

30           a log-in request unit that outputs the request of log-in to said logged-in device and, when receiving the response of failed log-in and the

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specification of the timing of re-request from said logged-in device, outputs another request of log-in to said logged-in device at the specified timing of re-request.

5           19. A method of controlling log-in, so as to enable a plurality of log-in devices to log in at least one logical unit included in a logged-in device via a predetermined communication path, said method comprising the steps of:

          (a) causing said logged-in device to give a response of failed log-in with regard to a certain logical unit to one log-in device of interest, which has  
10       just output a request of log-in to said certain logical unit, when a number of log-in devices that currently log in said certain logical unit reaches an allowable number of simultaneous log-in preset for said certain logical unit;

          (b) causing said logged-in device to specify a timing of re-request of log-in to determine a time when said log-in device of interest, which has just  
15       output the request of log-in to said certain logical unit and received the response of failed log-in, should output another request of log-in to said certain logical unit; and

          (c) causing said log-in device of interest to output another request of log-in to said certain logical unit included in said logged-in device at the  
20       specified timing of re-request when said log-in device of interest receives the response of failed log-in with regard to said certain logical unit and the specification of the timing of re-request from said logged-in device.

25           20. A method in accordance with claim 19, wherein said step (b) comprises the step of:

          causing said logged-in device to allocate ordinal numbers of precedence to said plurality of log-in devices in a sequence of outputting first requests of log-in to said certain logical unit, and to assign a shorter timing of re-request of log-in to a log-in device having a higher ordinal number of  
30       precedence.

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21. A computer program product that causes a computer to carry out a series of logged-in processing, said computer being logged in by a plurality of specific devices via a predetermined communication path, said computer  
5 program product comprising:

a first program code that causes said computer to give a response of failed log-in to one specific device of interest, which has just output a request of log-in, when a number of specific devices that currently log in said logged-in device reaches a predetermined allowable number of simultaneous log-in;

10 a second program code that causes said computer to specify a timing of re-request of log-in to determine a time when said specific device of interest, which has just output the request of log-in and received the response of failed log-in, should output another request of log-in; and

15 a computer readable medium, in which said first program code and said second program code are stored.

22. A computer program product in accordance with claim 21, wherein said second program code comprises:

20 a program code that causes said computer to allocate ordinal numbers of precedence to said plurality of specific devices in a sequence of outputting first requests of log-in, and to assign a shorter timing of re-request of log-in to a specific device having a higher ordinal number of precedence.

25 23. A computer program product that causes a computer to carry out a series of log-in processing, said computer logging in a specific device via a predetermined communication path, said computer program product comprising:

30 a program code that causes said computer to output a request of log-in to said specific device and, when receiving a response of failed log-in and a

specification of a timing of re-request from said specific device, output another request of log-in to said specific device at the specified timing of re-request; and

a computer readable medium, in which said program code is stored.

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24. A data signal embodied in a carrier, said data signal representing a computer program that causes a computer to carry out a series of logged-in processing, said computer being logged in by a plurality of specific devices via a predetermined communication path, said data signal comprising:

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a first program code that causes said computer to give a response of failed log-in to one specific device of interest, which has just output a request of log-in, when a number of specific devices that currently log in said logged-in device reaches a predetermined allowable number of simultaneous log-in; and

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a second program code that causes said computer to specify a timing of re-request of log-in to determine a time when said specific device of interest, which has just output the request of log-in and received the response of failed log-in, should output another request of log-in.

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25. A data signal in accordance with claim 24, wherein said second program code comprises:

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a program code that causes said computer to allocate ordinal numbers of precedence to said plurality of specific devices in a sequence of outputting first requests of log-in, and to assign a shorter timing of re-request of log-in to a specific device having a higher ordinal number of precedence.

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26. A data signal embodied in a carrier, said data signal representing a computer program that causes a computer to carry out a series of log-in processing, said computer logging in a specific device via a predetermined

communication path, said data signal comprising:

a program code that causes said computer to output a request of log-in to said specific device and, when receiving a response of failed log-in and a specification of a timing of re-request from said specific device, output  
5 another request of log-in to said specific device at the specified timing of re-request.

27. A computer program that causes a computer to carry out a series of logged-in processing, said computer being logged in by a plurality of  
10 specific devices via a predetermined communication path, said computer program comprising:

a first program code that causes said computer to give a response of failed log-in to one specific device of interest, which has just output a request of log-in, when a number of specific devices that currently log in said logged-in device reaches a predetermined allowable number of simultaneous log-in;  
15 and

a second program code that causes said computer to specify a timing of re-request of log-in to determine a time when said specific device of interest, which has just output the request of log-in and received the  
20 response of failed log-in, should output another request of log-in.

28. A computer program in accordance with claim 27, wherein said second program code comprises:

a program code that causes said computer to allocate ordinal  
25 numbers of precedence to said plurality of specific devices in a sequence of outputting first requests of log-in, and to assign a shorter timing of re-request of log-in to a specific device having a higher ordinal number of precedence.

29. A computer program that causes a computer to carry out a series



of log-in processing, said computer logging in a specific device via a predetermined communication path, said computer program comprising:

- 5 a program code that causes said computer to output a request of log-in to said specific device and, when receiving a response of failed log-in and a specification of a timing of re-request from said specific device, output another request of log-in to said specific device at the specified timing of re-request.

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